

Applicant : Leif Andersson et al.
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Attorney's Docket No.: 11145-007001

In the claims:

Please amend the claims as follows:

1. (Currently amended) An isolated nucleic acid comprising a human PRKAG3 sequence, wherein said human PRKAG3 sequence comprises a nucleotide sequence variant and nucleotides flanking said sequence variant, wherein said nucleotide sequence variant is at a position selected from the group consisting of nucleotide 230 of SEQ ID NO:5, nucleotide 559 of SEQ ID NO:5, nucleotide 642 of SEQ ID NO:3, and nucleotide 1037 of SEQ ID NO:5, and wherein said isolated nucleic acid is at least 15 base pairs in length.
2. (Original) The nucleic acid of claim 1, wherein said nucleotide sequence variant is associated with a metabolic disease.
3. (Original) The nucleic acid of claim 2, wherein said metabolic disease is diabetes or obesity.
4. (Cancelled)
5. (Cancelled)
6. (Currently amended) The nucleic acid of ~~claim 4~~ claim 1, wherein said ~~exon 3~~ nucleotide sequence variant comprises at nucleotide 230 is a substitution of a guanine for a cytosine at ~~nucleotide 230~~.
7. (Currently amended) The nucleic acid of ~~claim 4~~ claim 1, wherein said ~~exon 4~~ nucleotide sequence variant comprises at nucleotide 559 is a substitution of a thymine for a cytosine at ~~nucleotide 550~~.
8. (Currently amended) The nucleic acid of ~~claim 4~~ claim 1, wherein said ~~exon 10~~ nucleotide sequence variant comprises at nucleotide 1037 is a substitution of a thymine for a cytosine at ~~nucleotide 1037~~.

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9. (Cancelled)

10. (Cancelled)

11. (Currently amended) The nucleic acid of claim 1, wherein said PRKAG3 ~~nucleic acid~~ sequence encodes an AMP-activated protein kinase $\gamma 3$ subunit polypeptide, said polypeptide comprising an amino acid sequence variant.

12. (Currently amended) The nucleic acid of claim 11, wherein said amino acid sequence variant ~~comprises~~ is a substitution of an alanine residue for a proline residue at amino acid 71 of SEQ ID NO:6.

13. (Currently amended) The nucleic acid of claim 11, wherein said amino acid sequence variant ~~comprises~~ is a substitution of a tryptophan residue for an arginine residue at amino acid 340 of SEQ ID NO:6.

14-18. (Cancelled)

19. (New) The nucleic acid of claim 1, wherein said nucleotide sequence variant at nucleotide 642 is a substitution of a guanine for a cytosine.